# United States Department of the Interior

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2-15-2002-F-0387

Dear Mr. Lea:

The U.S. Fish and Wildlife Service (Service) has reviewed the proposed project regarding the Williamson County's extension of Parmer Lane between FM 1431 and RM 2243 in Williamson County, Texas. This extension requires a permit under Section 404 of the Clean Water Act from your agency. Your request for formal consultation was received on May 13, 2002. This document transmits the Service's biological opinion on the effects of the proposed activities on the following federally listed endangered (E) or threatened (T) species: bald eagle (T), black-capped vireo (E), golden-cheeked warbler (E), whooping crane (E), Bone Cave harvestman (E), Coffin Cave mold beetle (E), and Tooth Cave ground beetle (E). This consultation was conducted in accordance with section 7(a)(2) of the Endangered Species Act of 1973 (Act), as amended, (16 U.S.C. 1531 et. seq.).

This biological opinion is based on information provided by the Army Corps of Engineers, Fort Worth District, Environmental Division (Corps). The opinion is also based on the Biological Evaluation dated March 2002 submitted to our office by Athabasca Consulting Inc. (ACI) on behalf of Williamson County and the Corps. In addition, we had meetings with biologists from ACI to discuss the proposed activities and associated impacts. Other information used from our files is referenced and included as the References section. A complete administrative record of this consultation is on file in our office.

Three federally-listed karst invertebrate species are known to occur in Williamson County: Tooth Cave ground beetle (*Rhadine persephone*), Bone Cave harvestman (*Texella reyesi*), and Coffin Cave mold beetle (*Batrisodes texanus*). Karst is defined as a terrain characterized by land forms and subsurface features such as caves and sinkholes that are produced by solution (dissolving) of bedrock (usually limestone or gypsum). The cave invertebrates were listed in September 1988. The endangered cave invertebrates are believed to be restricted to a karst geologic region known generally as the Edwards geologic formation in Travis and Williamson Counties. The subject site is within karst geologic zones 3 and 4 (Veni 1992). Zones 3 and 4 are defined as areas that probably do not contain or do not contain Endangered Cave Species. The closest known location of listed karst species is approximately 2 miles (*Texella reyesi*).

Another federally listed species potentially occurring within Williamson County is the black-capped vireo (*Vireo atricapillus*). The whooping crane (*Grus americana*), the least tern *(Sterna antillarum*), bald eagle (*Haliaeetus leucocephalus*), and piping plover (*Charadrius melodus*) are listed as potentially occurring in all or most Texas counties. On-site reconnaissance efforts concluded that no habitat typical of black-capped vireo utilization (dense, low, hardwood shrubs) exists on the subject property. Additionally, no habitat for the whooping crane, bald eagle or other listed migratory bird species exists within the limits of the subject site.

Consultation History

On January 16, 2002, representatives of Williamson County met with the Service to discuss plans for the extension of Parmer Lane and the potential impacts to habitat of the golden-cheeked warbler (*Dendroica chrysoparia*). On March 6, 2002, the Service determined that the project, as described, would likely adversely affect the golden-cheeked warbler (GCW). The Corps initiated formal consultation by letter dated May 13, 2002. On May 22, 2002, the Service acknowledged the initiation of formal consultation as of May 13, 2002.

## BIOLOGICAL OPINION

### I. Description of the Proposed Action

The proposed extension of Parmer Lane begins at the existing terminus of Parmer Lane at FM 1431 and continues approximately 3 miles to the intersection of RM 2243 and County Road 268 in Williamson County, Texas (Figure 1). The proposed extension is a 6-lane, divided roadway within a 200-foot right-of-way (ROW). The extension will follow the existing low-traffic two-lane County Road 272 for approximately 2 miles. In addition, two sedimentation and filtration ponds will be placed outside of the 200-foot ROW.

The project includes measures to avoid and minimize impacts to the GCW, including the purchase of 109.2 GCW mitigation credits from the Hickory Pass Ranch Conservation Bank. The privately-owned Bank, located within the acquisition boundary for the Balcones National Wildlife Refuge in Burnet County, Texas, contains large blocks of occupied GCW habitat that is preserved and managed for the benefit of the warbler in perpetuity. Within the project area, protective measures include no clearing within 300 feet of potential GCW habitat (as delineated on Figures 4 through 10) during the GCW breeding/nesting season (March 1 through August 1). In addition, the clearing will be done in accordance with the Texas Forest Service recommended practices for prevention of the spread of oak wilt.

### II. Status of the Species

Golden-cheeked Warbler

The GCW was emergency listed as endangered on May 4, 1990 (55 FR 18844) because of the imminent and ongoing destruction of habitat. The GCW was federally listed as endangered without critical habitat on December 27, 1990 (55 FR 53160). The small neotropical migrant is

4.5 to 5 inches long with a wingspan of 7.75 inches. The male has a black back, throat and cap and yellow cheeks with a black stripe through the eye. Females are similar, but less colorful. The lower breast and belly of both sexes are white with black stripes on the flanks.

The GCW breeds only in the mixed Ashe juniper-deciduous woodlands of central Texas in the Hill Country west and north of the Balcones Fault and winters in the highland pine-oak woodlands of southern Mexico and northern Central America. It is the only bird species whose entire nesting range is confined to Texas; its entire breeding range is found within 33 counties on the Edwards Plateau and the Lampasas Cut Plain (Figure 2). The GCW is a habitat specialist that requires the shredding bark of mature Ashe junipers (*Juniperus ashei*) for nesting material and forages for insects in Ashe juniper and various deciduous tree species, especially Texas oak (*Quercus texana*). Other dominant deciduous species used for foraging include live oak (*Quercus virginiana*), cedar elm (*Ulmus crassifolia*), Mexican persimmon (*Diospyros texana*), hackberry (*Celtis laevigata* var. *texana*), Texas ash (*Fraxinus americana*), bald cypress (*Platanus occidentalis*), Arizona walnut (*Juglandaceae major*), big-tooth maple (*Acer grandidentatum*), Lacey oak (*Quercus laceyi*), and sycamore (*Platanus occidentalis*). GCWs feed almost entirely on insects and arachnids such as caterpillars, green lacewings, cicadas, katydids, walking sticks, flies, adult moths, small butterflies and spiders. The males arrive in central Texas around March 1 and begin to establish breeding territories, which they defend against other males by singing from visible perches within their territories. The females arrive a few days later but are more difficult to detect in the dense woodland habitat. Usually three or four eggs are laid. The average nest height is 15 feet above ground, ranging from 5 to 32 feet. Eggs are generally incubated in April and, unless there is a second nesting attempt, nestlings fledge in May to early June. By early August, GCWs begin their migration south.

The greatest threats to the GCW continue to be loss of habitat and urban encroachment. Human activities have eliminated much GCW habitat within the central and northern parts of the GCW's range. Before 1990, the primary reason for habitat loss was clearing for livestock grazing. Since then, the rate of habitat loss has accelerated as suburban developments spread into prime GCW habitat along the Balcones Escarpment, especially in the growth corridor from the Austin metropolitan area (including Williamson County) to San Antonio. Other factors that threaten the GCW are the loss to oak wilt of deciduous oaks upon which the warblers forage; nest parasitism by brown headed cowbirds; and, predation and competition by blue jays and other urban-tolerant birds (USFWS 1992).

Adjacent Travis County contains the greatest amounts of GCW habitat in large, contiguous blocks, and lies at the center of the species' range. Williamson County also contains GCW habitat, although the habitat tends to be found in smaller, fragmented blocks. There is little connectivity between the large habitat blocks in Travis County and other large blocks in adjacent recovery regions to the north and the south. Research on GCWs indicates that occupancy and productivity in small patches of habitat are considerably lower than in larger ones (Coldren 1998, Maas-Barleigh 1997, D. Keddy-Hector, Austin Community College, Austin, Texas, pers. comm. 1998).

Currently there are only three significant GCW populations receiving some degree of protection: those at the Balcones Canyonlands Preserve (BCP) [a regional HCP] in Travis County, the nearby Balcones Canyonlands National Wildlife Refuge (BCNWR) in Travis, Burnet and

Williamson Counties, and Fort Hood Military Reservation (Weinberg 1995) in Coryell and Bell Counties. Although Fort Hood contains large contiguous blocks of habitat, data indicate the population is not truly self-sustaining and depends on immigration and gene flow from Travis County populations. Outside of the BCP and the BCNWR in western Travis County, in adjacent areas of southern Travis, Williamson, Hays, and Burnet counties few large, contiguous blocks of habitat remain. Other important areas receiving some protection include Government Canyon State Natural Area and Camp Bullis in Bexar County.

Populations of GCW and other neotropical migrants are less stable in small habitat patches surrounded by urbanization (Coldren 1998, Engels 1995, Arnold *et al.* 1996, Bolger *et al.* 1997, Moses 1996). GCW populations are declining in suitable habitat in the rapidly urbanizing area east of Loop 360 in Travis County. For example, GCWs that formerly occupied 450 acres of habitat at Wild Basin Preserve, which is now surrounded by urban development, no longer breed there on a regular basis despite proximity to a large habitat block. Some studies indicate that the abundance of several bird species, including the GCW, is reduced within 200-500 m (656-1640 ft.) of an urban edge (Engels 1995, Arnold *et al.* 1996, Bolger *et al.* 1997, Coldren 1998). Coldren reported that GCW occupancy declined with increasing residential development and roadway width. Additional information on the status of the species can be found in the Golden-cheeked Warbler Recovery Plan (USFWS 1992) the Golden-cheeked Warbler Population and Habitat Viability Assessment Report (USFWS 1995).

There are very few large blocks of GCW habitat in Williamson County. Stable populations of GCWs are currently protected at Fort Hood to the north, the BCP to the south, and the BCNWR to the west. Except for the BCNWR in southwest Williamson County and Corps property at Lake Georgetown, no protected areas for the GCW exist in the County and none are planned because of the fragmented nature of the remaining habitat. The Service has issued 110 incidental take permits (section 10(a)(1)(B)) and 12 biological opinions anticipating take of GCW affecting 634,986 acres, portions of which were GCW habitat. Most of these permits were issued in Travis County. Three incidental take permits were issued in Williamson County affecting 21 acres. The estimated total GCW habitat acreage in 1988 was 814,219 acres supporting an estimated 13,800 breeding pairs (USFWS 1992) for which take has been authorized on approximately 77,000 acres (less than 10%). Approximately 37,039 acres of potential GCW habitat existed in Williamson County in 1988, mostly in scattered fragments less than 800 acres in size.

## III. Environmental Baseline

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat and ecosystem within the action area, not including the effects of the proposed action. The Service has determined the action area to be the 481.3 acres of GCW habitat located within the subject area of the extension of Parmer Lane between FM 1431 and RM 2243.

The Williamson County project area is located in the central portion of the GCW range, within Recovery Unit 5 (USFWS 1992), just north of populations in Travis County and east of the BCNWR. Habitat availability in this part of the range is limited to small patches of oak-juniper

woodlands remaining along river drainages and on remaining ranch land. Much of the region has been historically cleared of dense woodlands and converted to grasslands for cattle grazing and is currently undergoing rapid urbanization.

Although only one partial GCW survey conducted in the project area did not find GCWs, similar habitat approximately 1.75 miles to the south, 2.25 miles to the northeast and 4 miles to the west are known to be occupied by GCWs. Therefore, in the interest of time and economy, Williamson County decided not to conduct full presence/absence surveys and to assume that the areas that meet the criteria for suitable GCW habitat are occupied. Based on the proximity of habitat known to be occupied and similar vegetation characteristics within the action area, the Service believes that the GCW occurs within the action area.

In order to better describe the vegetation groups present, the action area was divided into seven sections (Figure 3). Each section has been subdivided into areas based on habitat characteristics (Figure 4). Each area is described below and assessed as having low, moderate or high quality habitat in comparison with known GCW habitat.

**Section 1** (Figure 5)

***Area A***

Area A is approximately 102 acres and contains oak/Ashe juniper woodlands. Tree species present include, but are not limited to: Ashe juniper, live oak, Texas oak (Spanish oak), and cedar elm. Canopy cover for Area A ranges between 15 percent and 80 percent with a median canopy cover of 50 percent. Median canopy tree height in Area A is approximately 25 feet. Area A predominantly possesses a mix of mature and immature, re-growth Ashe juniper individuals. A narrow stretch (100 feet wide) of managed grassland with low densities of pecan (*Carya illinoensis*), live oak, and Texas oak is located immediately north of Spanish Oak Creek and west of its intersection with the ROW. Although Area A contains some of the structural and compositional vegetative elements found in regularly utilized GCW habitat, the GCW habitat is low quality because of the relatively open canopy and low incidence of deciduous hardwoods.

*Area B*

Area B is approximately 18 acres and contains oak/Ashe juniper woodlands. The most common tree species in Area B is Ashe juniper with low densities of live oak, Texas oak, willow (*Salix nigra*), and yaupon holly (*Ilex vomitoria*). Canopy cover for Area B ranges between 10 and 75 percent with a median canopy cover of 45 percent. Median canopy tree height in Area B is approximately 20 feet. The majority of the Ashe juniper individuals present within Area B are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area B does not possess the structural and/or compositional vegetative elements utilized by GCW.

**Section 2** (Figure 6)

***Area A***

Area A is approximately 26.7 acres and contains riparian and oak/Ashe juniper woodlands. Tree species present include, but are not limited to: Ashe juniper, Texas (Spanish) oak, live oak, cedar elm, pecan, sycamore, Texas ash, hackberry, osage orange (*Muclura pomifera*), willow, chinaberry (*Melia azedarach*), and flameleaf sumac (*Rhus lanceolata*). Canopy cover for Area A ranges between 50 percent and 85 percent with a median canopy cover of 75 percent. Median

canopy tree height in the riparian woodland is approximately 35 feet and median tree height of the canopy in the oak/Ashe juniper woodland is approximately 20 feet. The majority of the deciduous tree species present in Area A are structurally mature. Area A possesses a mix of mature and immature, re-growth Ashe juniper individuals. Area A contains the structural and compositional vegetative elements found in regularly utilized GCW habitat. Overall, the GCW habitat quality rating of Area A is moderate.

***Area B***

Area B is approximately 27.4 acres and is located south of Area A. This area contains oak/Ashe juniper woodlands. The most common tree species in Area B is Ashe juniper. Other tree species present include, but are not limited to: live oak, shin oak (*Quercus havardii*), cedar elm, Texas oak, post oak (*Quercus stellata*), and hackberry. Canopy cover for Area B ranges between 50 percent and 80 percent with a median canopy cover of 70 percent. Median canopy tree height in Area B is approximately 20 feet. The majority of the Ashe juniper individuals present within Area B are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area B contains the compositional elements yet lacks the structural vegetative elements found in regularly utilized GCW habitat. The canopy cover and tree density are not uniform throughout the area and are not consistent with other habitat areas known to be regularly utilized by GCW. The GCW habitat quality rating for Area B is low.

***Area C***

Area C is approximately 7 acres located to the north of Area A. This area contains semi-open riparian woodlands. Trees species in Area C include, but are not limited to: cedar elm, pecan, sycamore, Ashe juniper, Texas ash, hackberry, osage orange, willow, chinaberry, and flameleaf sumac. Canopy cover for Area C ranges between 10 percent and 65 percent. Median canopy tree height in Area C is approximately 25 feet. The majority of the tree species present in Area C are structurally mature. Area C does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

***Area D***

Area D is approximately 10.7 acres and contains oak/Ashe juniper woodlands. The most common tree species in Area D is Ashe juniper. Other tree species present include, but are not limited to: live oak, shin oak, cedar elm, Texas oak, post oak, and hackberry. Canopy cover for Area D ranges between 30 percent and 80 percent with a median canopy cover of 60 percent. Median canopy tree height in Area D is approximately 20 feet. The majority of the Ashe juniper individuals present within Area D are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area D does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

**Section 3** (Appendix, Figure 7)

***Area A***

Area A is approximately 40 acres and contains oak/Ashe juniper woodlands. Tree species present include, but are not limited to: Ashe juniper, live oak, cedar elm, Texas (Spanish) oak, hackberry, post oak, pecan, chinaberry, and American elm (*Ulmus americana*). Canopy cover for Area A ranges between 50 percent and 80 percent with a median canopy cover of 65 percent. Median canopy tree height in Area A is approximately 25 feet. The majority of the deciduous tree species present in Area A are structurally mature. Area A possesses a mix of mature and

immature, re-growth Ashe juniper individuals. Area A contains the structural and compositional vegetative elements found in regularly utilized GCW habitat. The GCW habitat quality rating for Area A is moderate.

***Area B***

Area B is approximately 9.1 acres and contains oak/Ashe juniper woodland patches. Tree species present include, but are not limited to: Ashe juniper, live oak, cedar elm, hackberry, and post oak. Canopy cover for Area B ranges between 20 percent and 60 percent with a median canopy cover of 40 percent. Median canopy tree height in Area B is approximately 20 feet. The majority of the Ashe juniper individuals present within Area B are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area B contains the compositional elements yet lacks the structural vegetative elements found in regularly utilized GCW habitat. The canopy cover and tree density are not uniform throughout the area and are not consistent with other habitat areas known to be regularly utilized by GCW. The GCW habitat quality rating for Area B is low.

***Area C***

Area C is approximately 12.9 acres and is located to the north of Area C. This area contains oak/Ashe juniper woodland patches. Tree species present include, but are not limited to: Ashe juniper, live oak, cedar elm, hackberry, and post oak. Canopy cover for Area C ranges between 10 percent and 50 percent with a median canopy cover of 20 percent. Median canopy tree height in Area C is approximately 20 feet. The majority of the Ashe juniper individuals present within Area C are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area C does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

**Section 4** (Appendix, Figure 8)

***Area A***

Area A is approximately 24.5 acres and contains oak/Ashe juniper and riparian woodlands. Tree species in the oak/Ashe juniper woodlands include, but are not limited to: Ashe juniper, live oak, Texas oak, cedar elm, and hackberry. Tree species in the riparian woodlands include, but are not limited to: sycamore, pecan, Texas oak, osage orange, cedar elm, chinaberry, willow, and Ashe juniper. Canopy cover for Area A ranges between 40 percent and 70 percent with a median canopy cover of 60 percent. Median canopy tree height in the oak/Ashe juniper woodlands of Area A is approximately 20 feet and median tree height of the canopy in the riparian woodlands of Area A is approximately 35 feet. Area A possesses a mix of mature and immature, re-growth Ashe juniper individuals. Area A contains the structural and compositional vegetative elements found in regularly utilized GCW habitat. The GCW habitat quality rating for Area A is moderate.

***Area B***

Area B is approximately 68 acres and contains oak/Ashe juniper woodland patches and Ashe juniper woodlands. Tree species in the oak/Ashe juniper woodland patches include, but are not limited to: Ashe juniper, live oak, cedar elm, post oak, hackberry, and Texas oak. Tree species in the Ashe juniper woodlands include, but are not limited to: Ashe juniper, live oak, and cedar elm. Canopy cover for the oak/Ashe juniper woodland patches of Area B ranges between 20 percent and 60 percent with a median canopy cover of 40 percent. Canopy cover for the Ashe

juniper woodlands of Area B ranges between 60 percent and 80 percent with a median canopy cover of 70 percent. Median canopy tree height in the oak/Ashe juniper woodland patches of Area B is approximately 20 feet and median canopy tree height in the Ashe juniper woodlands is approximately 15 feet. Area B possesses a mix of mature and immature, re-growth Ashe juniper individuals. Area B does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

**Section 5** (Appendix, Figure 9)
Section 5 is approximately 12 acres and contains Ashe juniper woodlands. The most common tree species in Section 5 is Ashe juniper with very low densities of live oak, flameleaf sumac, cedar elm, hackberry, and chinaberry. Canopy cover for Section 5 ranges between 30 percent and 75 percent with a median canopy cover of 50 percent. Median canopy tree height in Section 5 is approximately 15 feet. Section 5 possesses a mix of mature and immature, re-growth Ashe juniper individuals. Section 5 does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

**Section 6** (Appendix, Figure 9)
Section 6 is approximately 27 acres and contains cedar elm/Ashe juniper woodlands and semi-open Ashe juniper woodlands. Tree species present in the cedar elm/Ashe juniper woodland of Section 6 include, but are not limited to: cedar elm, Ashe juniper, hackberry, live oak, pecan, sycamore, willow, and American elm. The dominant tree species in the semi-open Ashe juniper woodland is Ashe juniper. Canopy cover for the cedar elm/Ashe juniper woodlands ranges between 40 percent and 85 percent with a median canopy cover of 60 percent. Canopy cover for the semi-open Ashe juniper woodland ranges between 20 percent and 60 percent; the median canopy cover is 40 percent. Section 6 does not contain a contiguous canopy. Median canopy tree height in the cedar elm/Ashe juniper woodlands is approximately 25 feet and the median canopy tree height in the semi-open Ashe juniper woodland is approximately 15 feet. The majority of the Ashe juniper individuals present within Section 6 are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Section 6 does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

**Section 7** (Appendix, Figure 10)
***Area A***
Area A is approximately 10 acres and contains oak/Ashe juniper woodlands. Tree species present include, but are not limited to: Ashe juniper, Texas oak, live oak, and cedar elm. Canopy cover in Area A ranges between 60 percent and 75 percent with a median canopy cover of 70 percent. Median canopy tree height in Area A is approximately 25 feet. Area A possesses a mix of mature and immature, re-growth Ashe juniper individuals. Area A contains the structural and compositional vegetative elements found in regularly utilized GCW habitat, however, the small patch size is not consistent with other habitat areas known to be regularly utilized by GCW. The GCW habitat quality rating for Area A is low.

***Area B***
Area B is approximately 40 acres and contains riparian woodlands. Tree species present in Area B include, but are not limited to: sycamore, chinaberry, cedar elm, pecan, willow, Ashe juniper, Texas Ash, hackberry, live oak, and osage orange. Canopy cover in Area B ranges between 30 percent and 75 percent with a median canopy cover of 50 percent. Median canopy tree height in Area A is approximately 30 feet. Although Area B contains some mature Ashe juniper

individuals, the majority of the Ashe juniper individuals present within Area B are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area B does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

***Area C***

Area C is approximately 46 acres and contains Ashe juniper woodlands. The most common tree species in Area C is Ashe juniper with low densities of live oak. Canopy cover in Area C ranges between 20 percent and 60 percent with a median canopy cover of 40 percent. Median canopy tree height in Area C is approximately 15 feet. The majority of the Ashe juniper individuals present within Area C are shrub-like, multi-trunk, re-growth Ashe juniper that are structurally immature. Area C does not possess the structural and/or compositional vegetative elements utilized by GCW for habitat.

In accordance with Service guidelines, **aci** conducted a 2001 bird survey in a portion of (49 acres) Section 1, Area A for GCW. No sightings of GCW were recorded during the survey.

Currently, the majority of the project area consists of undeveloped land containing open fields and woodlands, with a small percentage consisting of residential lots. The potential GCW habitat within the action area is highly fragmented, with all of the patches nearly completely surrounded by pastureland and/or residential development.

In the action area, there is a total of 148.5 acres of low quality habitat, 91.2 acres of moderate quality habitat and 240.6 acres of non-habitat.

## IV. Effects of the Proposed Action

The proposed action will cause direct and indirect impacts to approximately 91.2 acres of medium quality GCW habitat and 148.5 acres of low quality GCW habitat. Direct impacts in the action area will remove vegetation including GCW habitat within the 200-foot ROW, fragmenting the already small blocks of habitat. GCWs prefer large unfragmented blocks of habitat and isolated blocks of habitat (more than 3,100 feet from another block) should be at least 250 acres for long term sustainability. Isolation increases the likelihood that displaying males will not be able to attract females, that fledglings will not be able to disperse successfully, and that disturbance events may inhibit successful reproduction (USFWS 1996). Indirect effects include elevated noise levels from high levels of traffic, increased likelihood of human intrusion into GCW habitat, invasion of exotic species, and an increased predation and parasitism by blue jays and cowbirds. The largest patch (sections 2, 3 and 4), currently approximately 210 acres, will be bisected by the 6-lane highway. Although the vegetation will be left in its natural state, the indirect impacts make the habitat no longer suitable for GCW. The fragmented habitat that currently exists is not likely to remain viable in the long term as the surrounding land use changes and it loss would not preclude the long term survival and recovery of the GCW in Recovery Unit 5.

The measures included in the proposed action will minimize to some extent the impacts on the GCW. Clearing within 300 feet of potential GCW habitat will not occur during the time the GCW are in the area (March 1 to August 1). The clearing will be done in accordance with the

Texas Forest Service recommended practices for prevention of the spread of oak wilt. The purchase of 109.2 mitigation credits from the Hickory Pass Ranch mitigation bank will set aside additional preserve lands within the core habitat area of the range of the GCW and provide a benefit to the species long term survival and recovery.

## V. Cumulative Effects

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act.

The rapid growth of Williamson County, due to the economic expansion of the Austin metropolitan area, will continue to result in the loss of natural oak-juniper woodlands, and therefore, the habitat of GCW. Williamson County has experienced steady growth in the 1990's. According to the 2000 U.S. Census, the population increase from 1990 to 2000 was approximately 79.1%. The 2000 population count was 249,967, up from 139,551 in 1990. This trend is expected to continue. According to the Texas Water Development Board, the projected population for Williamson County in 2020 is 523,038. It is likely that more development will occur within the GCW habitat blocks in the action area.

## VI. CONCLUSION

After reviewing the current status of the GCW, the environmental baseline for the action area, the effect of the proposed action, and the cumulative effects, it is the Service's biological opinion that the extension of Parmer Lane between FM 1431 and RM 2243 is not likely to jeopardize the continued existence of the GCW. No critical habitat has been designated for this species; therefore, none will be affected.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to Section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of Section 7 (b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in Section 7(o)(2) to apply. The Corps has a continuing

duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

**Extent of Take**

The Service anticipates the proposed action will result in incidental take of GCWs. Harm is expected in the form of habitat degradation by loss of nesting habitat through permanent loss of oak-juniper woodlands. In addition, loss of potential habitat is estimated at 91.2 acres of medium and 148.5 acres of low quality potential habitat, which may result in the take of up to four breeding pairs of GCW.

**Effect of the Take**

In the biological opinion on this project, the Service determined that this level of anticipated take of GCWs (less than 1% of the estimated population) is not likely to jeopardize the continued existence of the species.

**Reasonable and Prudent Measures**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of the GCW:

> Clearing and construction by the Applicant within the proposed development areas shall be consistent with the current practices recommended by the Texas Forest Service to prevent the spread of oak wilt.

> The Corps (or the Applicant at the Corps' discretion) shall provide annual reports on October 1 until completion of the project to the Service documenting the implementation of the proposed action including evidence of the purchase of conservation credits, status of the project, and any conservation recommendations that are initiated.

**Conservation Recommendations**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The following recommendations are provided for consideration by the Corps:

1. The Corps should work with Williamson County to develop and implement an endangered species education program with emphasis on endangered and threatened Texas species, especially those found in Central Texas.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

**Re-initiation-Closing Statement**

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR Sec. 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Biological Opinion or proposed mitigation measures are not implemented; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion, please contact Sybil Vosler at (512) 490-0057.

Sincerely,

William Seawell

William Seawell
Acting Field Supervisor

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FIGURE 1
Project Area
Parmer Lane: FM 1431 - RM 2243

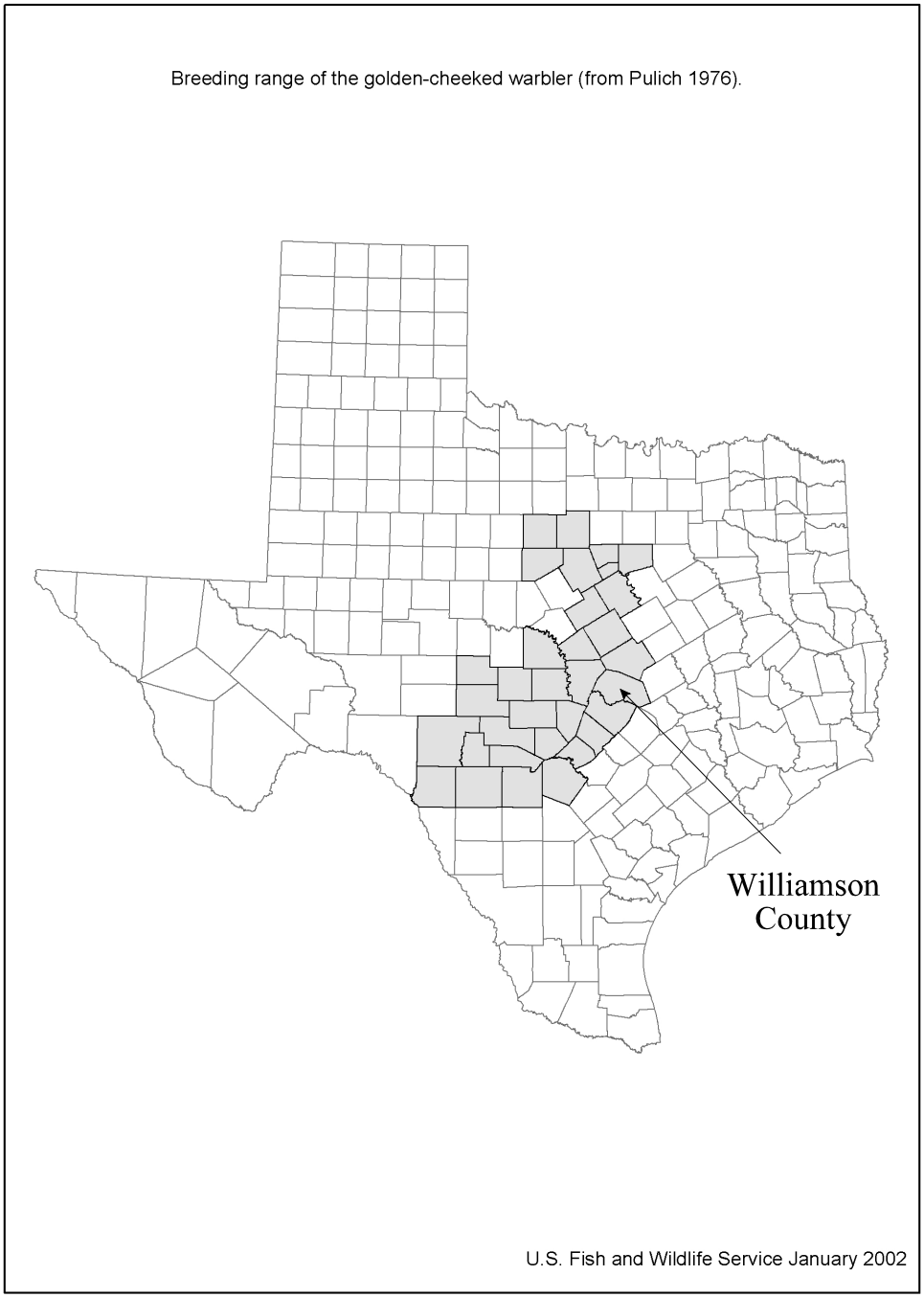

Breeding range of the golden-cheeked warbler (from Pulich 1976).
Williamson
County
U.S. Fish and Wildlife Service January 2002

Figure 2


FIGURE 3
Parmer Lane: FM 1431 - RM 2243

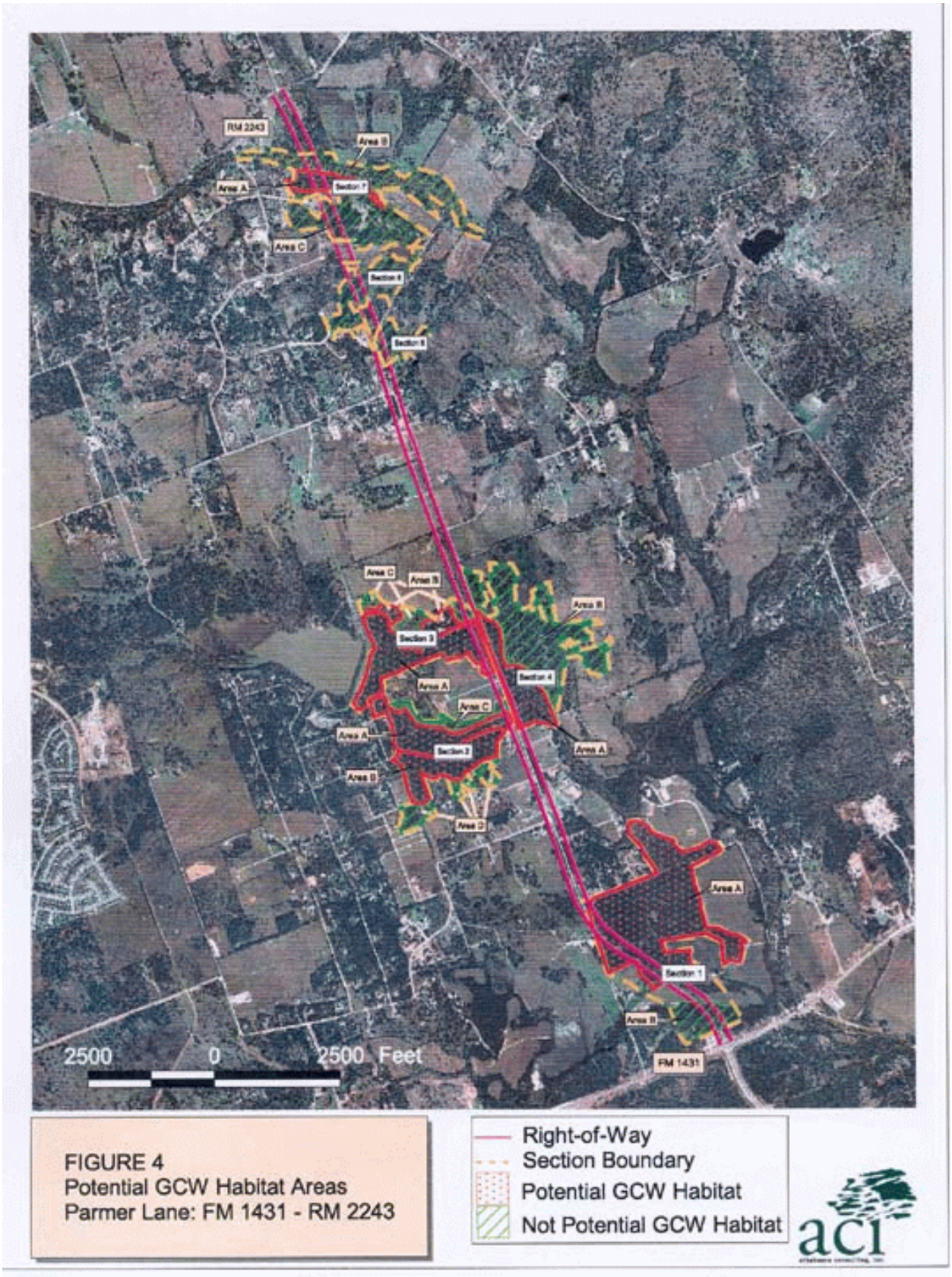
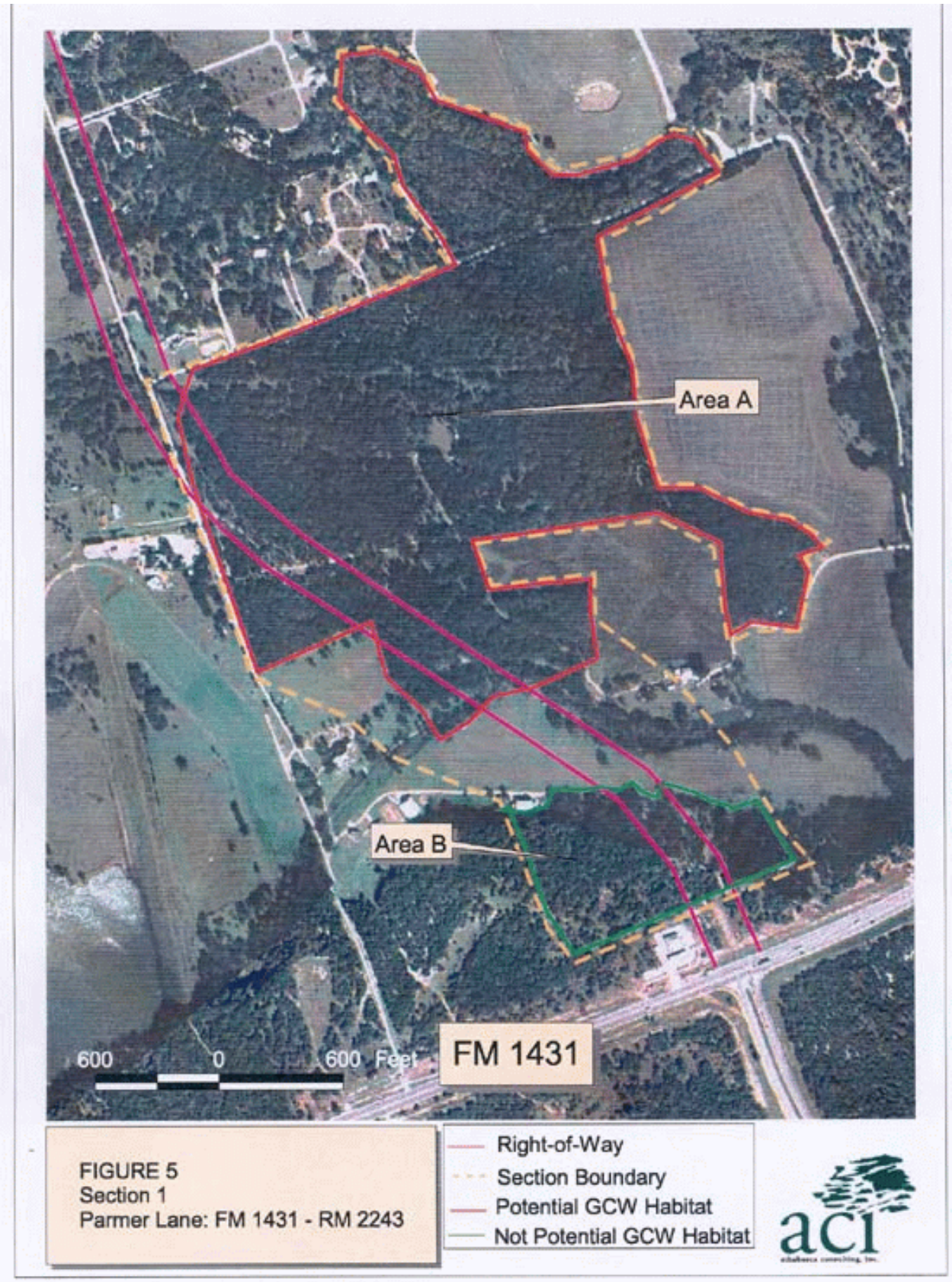



FIGURE 4
Potential GCW Habitat Areas
Parmer Lane: FM 1431 - RM 2243


Area A
Area B
FM 1431
600 0 600 Feet
FIGURE 5
Section 1
Parmer Lane: FM 1431 - RM 2243
Right-of-Way
Section Boundary
Potential GCW Habitat
Not Potential GCW Habitat
aci

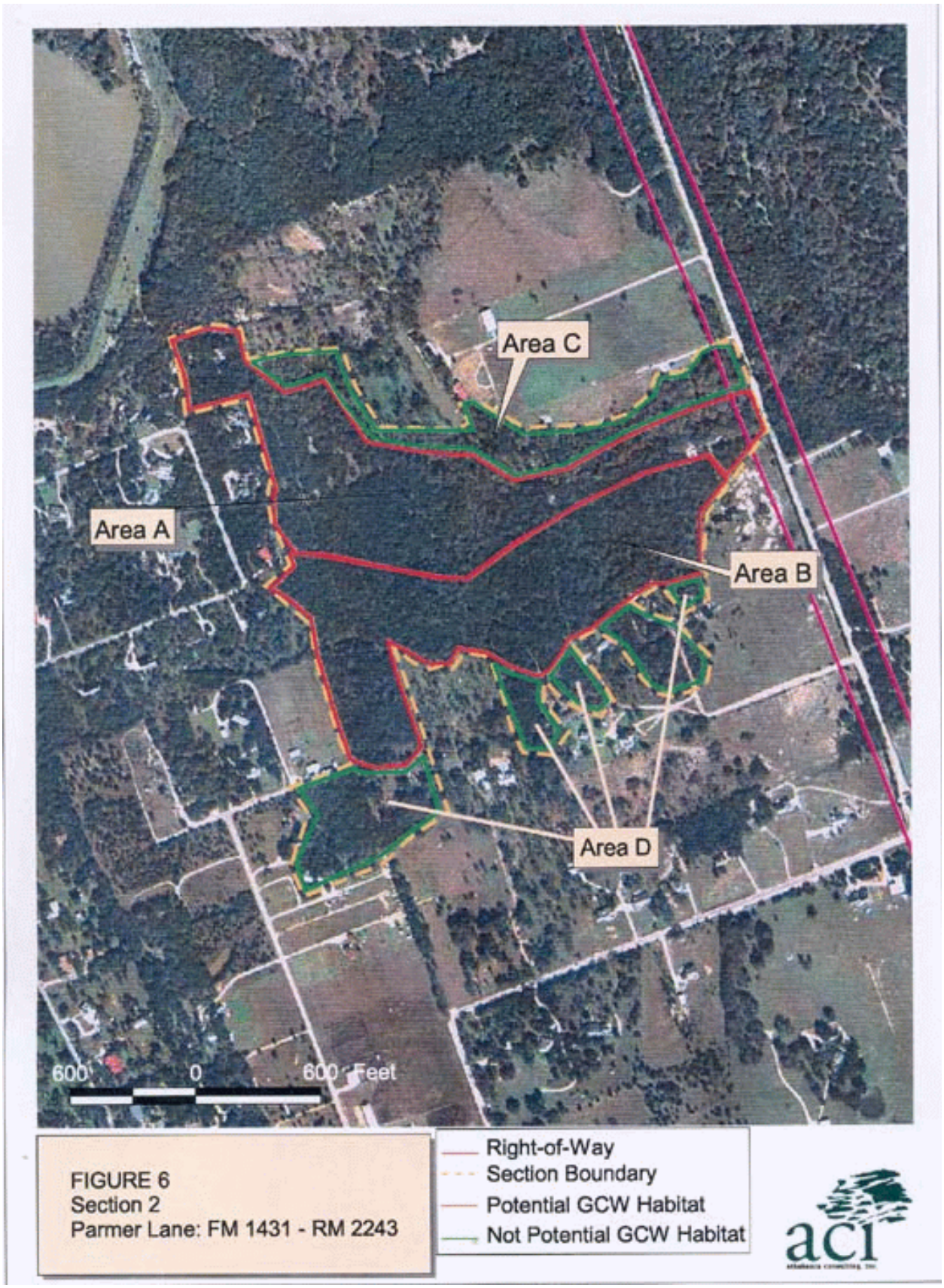



FIGURE 6
Section 2
Parmer Lane: FM 1431 - RM 2243


FIGURE 7
Section 3
Parmer Lane: FM 1431 - RM 2243

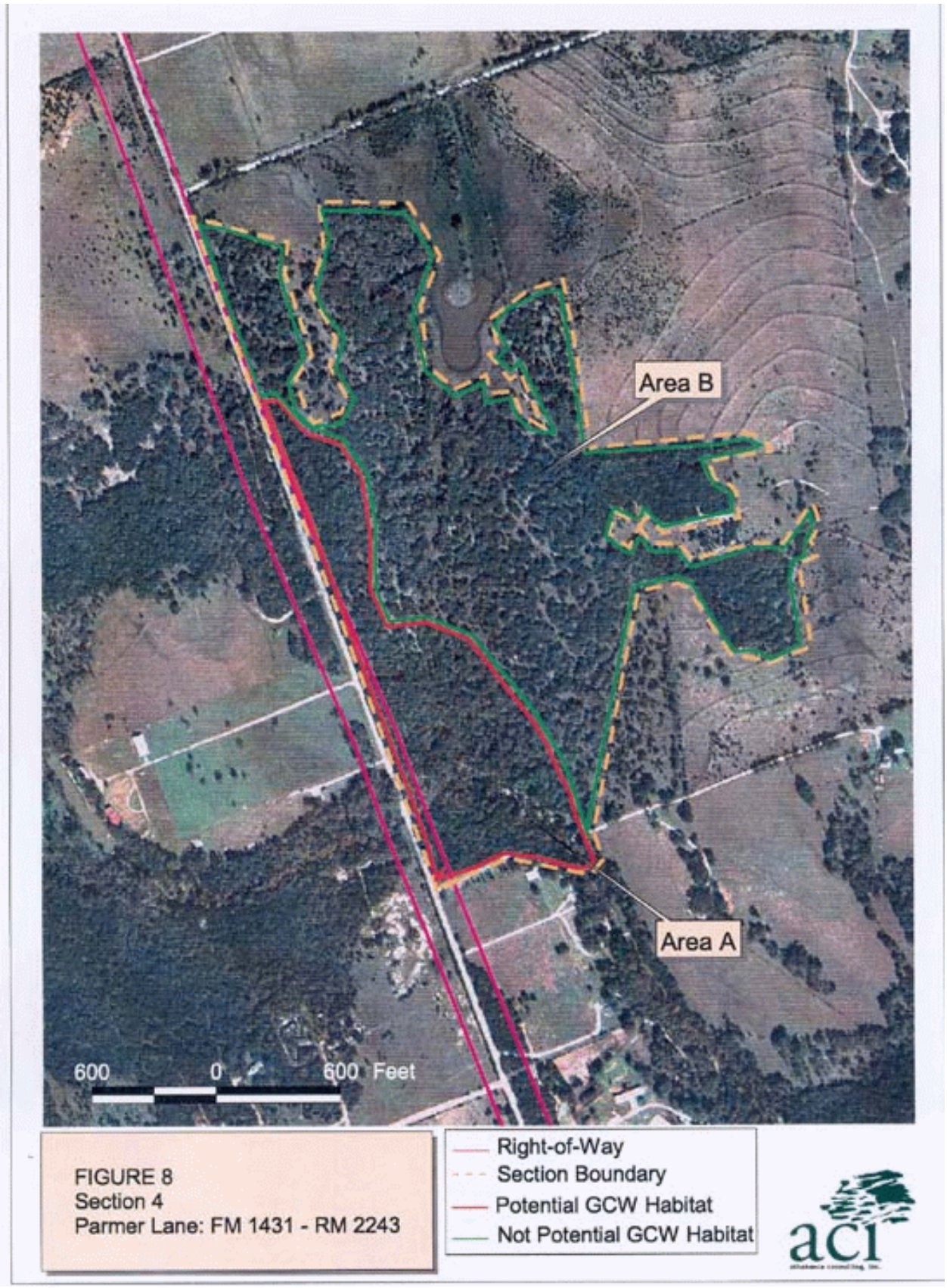



FIGURE 8
Section 4
Parmer Lane: FM 1431 - RM 2243

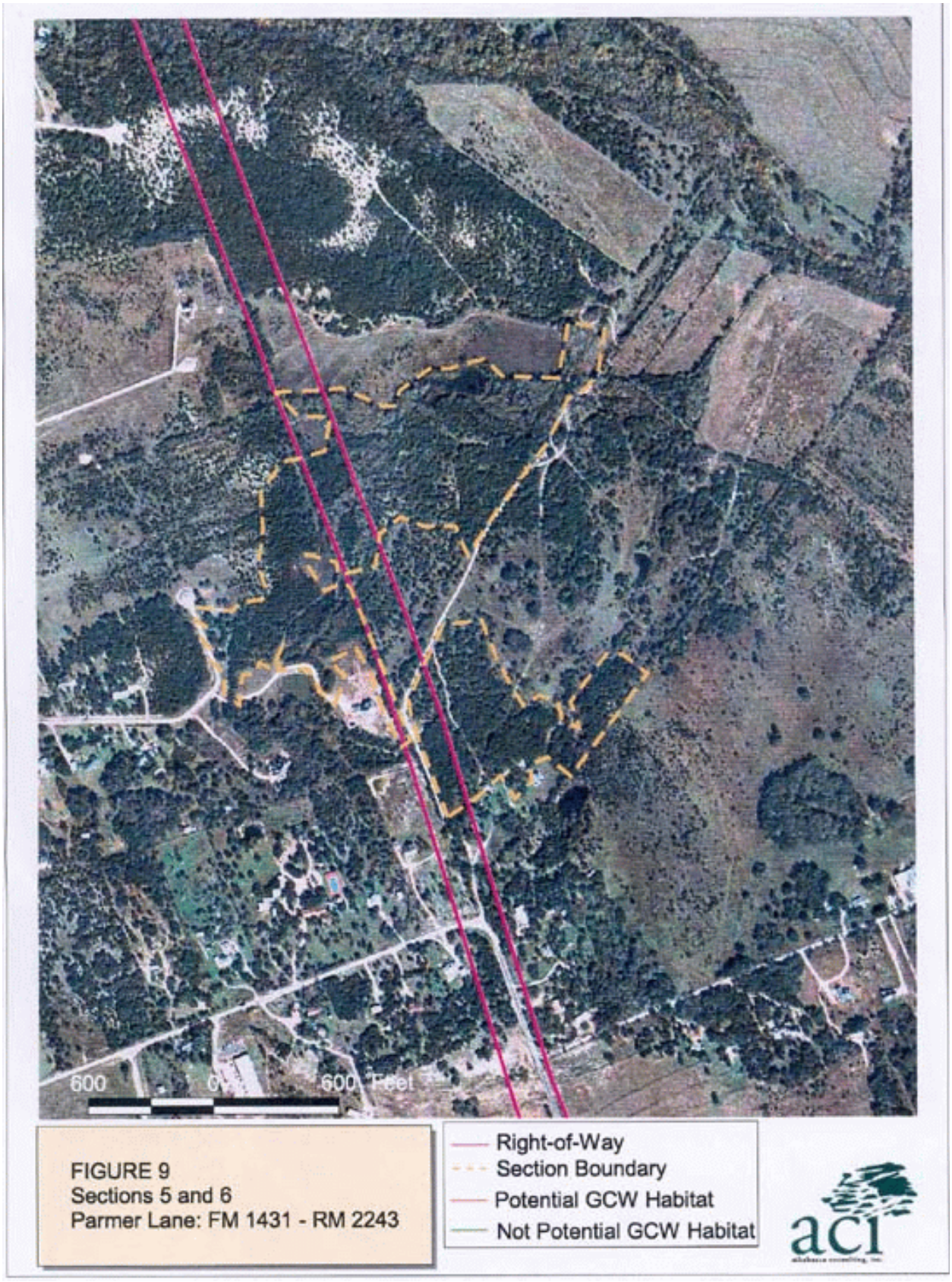



FIGURE 9
Sections 5 and 6
Parmer Lane: FM 1431 - RM 2243

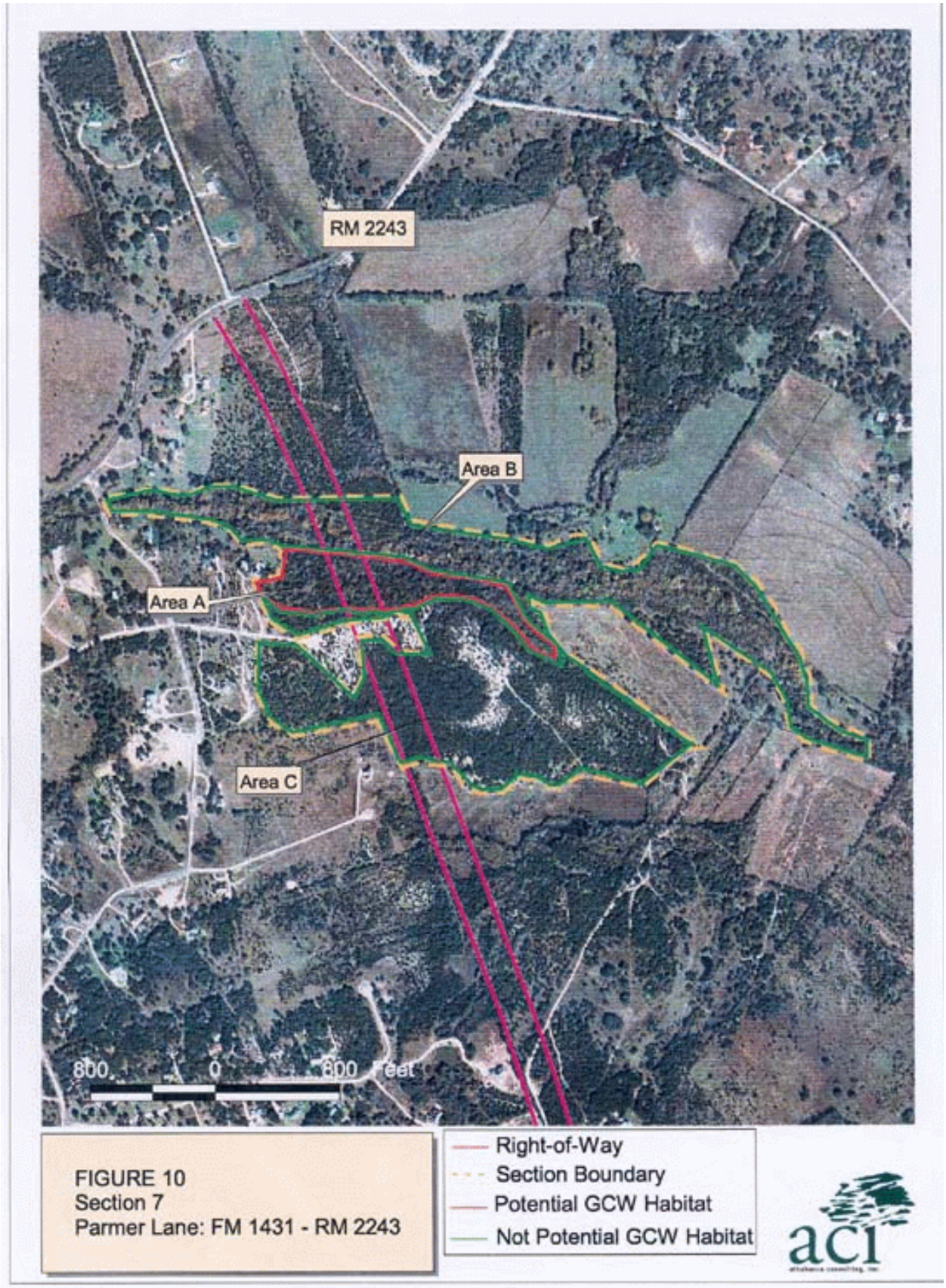



FIGURE 10
Section 7
Parmer Lane: FM 1431 - RM 2243